

Translation, Cross-Cultural Adaptation, Reliability and Validity of the Malay Version of Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) V3.1

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Abstract

Introduction: A psychoactive substance has become an overwhelming public health burden globally. It causes social problems for the user and surrounding people which may affect work or study and cause negative economic impact.

Objective: This study aims to translate and culturally adapt the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) into Malay and to assess its reliability and validity. **Methods:** The Malay version of the ASSIST v 3.1 was developed after the translation and back-translation, which included the stages recommended by Beaton. The ASSIST v 3.1 was administered to 125 respondents. The Malay ASSIST v 3.1 was completed twice by each respondent 7 to 14-day intervals to assess test-retest reliability based on the intra-rater and interrater correlation coefficient. **Results:** Majority of the respondents were male, Malay and currently employed. The intra-rater reliability is 0.84 and the test-retest reliability (ICC = 0.97) were excellent. **Conclusion:** Malay ASSIST v3.1 was a valid and reliable tool to screen substances abuse at varying degree. Nonetheless, further studies are needed to assess its responsiveness.

Keywords

Substance Use, Translation, Reliability, Validity, ASSIST

1. Introduction

Psychoactive substance use has become an overwhelming public health burden globally [1]. It also causes significant social problems for the user and surrounding people and environment like family and friends which may affect work or study and cause negative economic impact [2]. Substance use is associated with physical and mental health problem [3] [4]. Globally, there is an increasing trend for people to use multiple substances, either together or at different times, which is likely to further increase the risks [5]. Substance use is among the top 20 risk factors for death and disability worldwide [4] [6] [7]. There is also evidence that the burden on health care systems from non-dependent, but harmful or hazardous use, may be greater than the burden due to dependent use [6] [8].

The World Health Organization (WHO) and specialist addiction researchers had developed Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) in 1997 in response to the overwhelming public health burden associated with psychoactive substance use worldwide [9]. It consists of five domains namely; domain A which is a questionnaire regarding alcohol, tobacco and substances used, domain B is a respond card for patients, domain C is a feedback report card for patients on alcohol, smoking and substance involvement screening test (WHO ASSIST v3.0), domain D is a card on risks of injecting on information for patients and domain E is about information on translation and adaptation to local languages and culture as a resource for clinicians and researchers [9] [10] [11] [12]. The ASSIST has been translated into Arabic, Chinese, Hindi, Persian, French, German, Portuguese and Spanish [10]. It is a simple screening method using a questionnaire to identify type of psycho active substance and other hazardous, harmful and dependent use of alcohol and tobacco in the population [10]. The questionnaire covers tobacco, alcohol, cannabis, cocaine, amphetamine type stimulants (ATS), sedatives, hallucinogens, inhalants, opioids, and other drugs [11]. The ASSIST has undergone significant testing to ensure that it is feasible, reliable, valid, flexible, comprehensive and cross-culturally relevant, and able to be linked to brief interventions [12].

The ASSIST was developed principally for use in primary health care settings where harmful substance use among patients may go undetected or become worse [10]. Many health care professionals can identify dependence or addiction in patients, but may not be able to identify substance use that is not dependent, but still causing harms [12]. The ASSIST is an interviewer-administered pencil and paper questionnaire and screens for all levels of problem or risky substance use. A risk score is provided for each substance, and scores are grouped into low, moderate or high risk. The risk score determines the level of intervention such as treatment or brief intervention or referral to specialist treatment [11].

Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) was developed for primary health care settings where hazardous and harmful substance use among clients may go undetected, or become worse [13] [14]. The ASSIST was designed to be culturally neutral and useable across a variety of cul-

tures to screen for use of the substances such as tobacco products, alcohol, cannabis, cocaine, ATS which refer to a group of drugs whose principal members include amphetamine and methamphetamine and a range of other substances such as methcathinone, fenetylline, ephedrine, pseudoephedrine, methylphenidate and MDMA or “Ecstasy”—an amphetamine-type derivative with hallucinogenic properties, sedatives and sleeping pills (benzodiazepines), hallucinogens, inhalants, opioids and other drugs [10] [15]. The ASSIST obtains information from clients about lifetime use of substances and use of substances and associated problems over the last 3 months. The ASSIST determines a risk score for each substance which is used to start a discussion with clients about their substance use. The score obtained for each substance falls into a “lower”, “moderate” or “high” risk category which determines the most appropriate intervention for that level of use (“no treatment”, “brief intervention” or “referral to specialist assessment and treatment” respectively) [13] [14] [15].

1.1. ASSIST Development

Substance abuse is also an important public health problem in Malaysia not only because of its health effects and the spread of infectious diseases like HIV and Hep B, but more importantly, the detrimental effects on the social fabric as well as the economic impact on the country [16] [17] [18]. There were an estimated 400,000 to 800,000 drug users in Malaysia, 170,000 of whom are reported as injecting drug user [19]. A total number of 65,249 patients were reported to be on Medication Assisted Therapy (MAT) at either government or private facility as of December 2013 [20]. Owing to the effectiveness of the programme, the number of drug users has shown a decreasing trend from 23,642 in 2010 to 20,887 in 2013 [21]. However, Malaysian Royal Police Force reported that there was an increase in trend of Amphetamine-type stimulant (ATS) in the country by 218% within six years from 26,763 (2007) to 85,140 (2013) [20]. More than half of the ATS drug users (52.4%) were youth age less than 30 years old. Polydrug user is also becoming more common in the country. Hence, existing MAT clinic need to be upgraded and transformed into multidrug treatment centre instead of focusing on opiate alone [20]. Therefore, the translated and validated version of ASSIST in Malay is timely to enable the programme manager and policy maker to evaluate and improve the existing programmes within Malaysia.

1.2. ASSIST as Screening Tool

Application of ASSIST as a screening tool will allow detection of multiple substance abuser and provision of appropriate intervention [22]. At present, there is no validated Malay version of ASSIST. The Malay version ASSIST v3.1 questionnaire is planned to be used as a valid and reliable tool for detecting and intervene people on substances abuse in local primary care setting. Screening for substance abuse is an additional programme besides existing screening activities in primary health care. Hence, it is crucial and essential to support the screening

and intervention programme of substance abuser in primary care setting in Malaysia. Thus, this study aims to validate the Malay version ASSIST v3.1 questionnaire that is adaptable to local culture and clinical practice in terms of content validity and rater agreement.

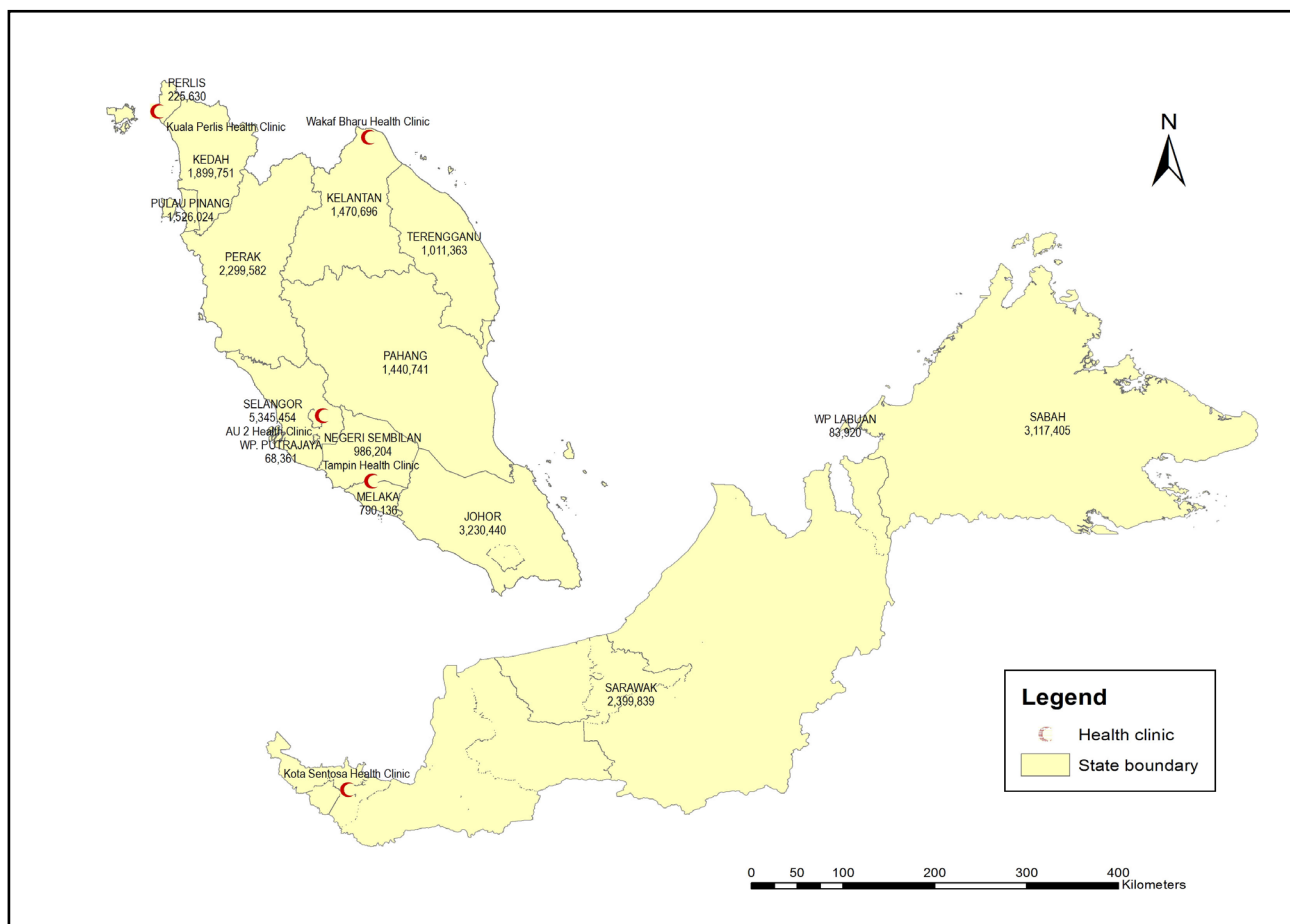
2. Material and Methods

2.1. Site Selection

A cross sectional study was conducted from 2013 to 2014 among patients attending MAT at five primary health care clinics under Ministry of Health, Malaysia (MOH). The health clinics were selected from different zones in Malaysia as shown in **Figure 1**, namely Kuala Perlis Health Clinic representing north, Tampin Health Clinic for south, Wakaf Bharu Health Clinic for east coast and AU2 Health Clinic for central. Kota Sentosa Health Clinic, Sarawak was selected for East Malaysia.

2.2. Subject Selection

A total of 130 respondents were invited to participate in this study. Of these, 125



Source from Mapping of Health Facilities and Services for Policy Decision Making, Ministry of Health, Malaysia.

Figure 1. Malaysia map.

respondents answered the questionnaire giving rise to 96% response rate. Respondents aged 18 and above, could read and converse in Malay language fluently were eligible for this study. Respondents with known psychotic, under psychiatric follow-up or having acute medical condition or crisis were excluded. All respondents were briefed about this study. The sample size for reliability assessment was calculated using statistical program Stata based on intraclass correlation coefficient for two raters and two times agreement which suggested 26 respondents per clinic. Raters were selected among medical personnel representing the primary health care clinics personnel and systematic random sampling was applied to select the respondents.

2.3. Measurement Tool

An English version of WHO ASSIST questionnaire version 3 was used [9] [11]. A standardized data collection form was created to obtain the sociodemographic characteristics. The questionnaire contains five domains which includes a set of questions on eight items, response card for patients, feedback report card for patients, risks of injecting card containing information for patients and lastly translation and adaptation to local languages and culture as a resource for clinicians and researchers [23].

2.4. Translation and Cultural Adaptation

Phase I involved translation, content validation and material preparation followed by Phase II which included reliability assessment, analysis and report preparation (February 2013-July 2014). Two native speaking Malay who were fluent in English translated the questionnaire into Malay through cross cultural adaptation process involving four stages namely translation, synthesis, back translation and pretesting of the translated questionnaire [23]. The informed translator was a public health physician and the uninformed one was a linguist.

2.5. Initial Translation Process

The first stage of translation started with a forward translation into Malay by the two native speaking Malay followed by production of first consensus after revision by an expert committee. The first consensus was back-translated into English by a bilingual linguist and revised by the expert committee. The expert committee consist of two psychiatrists, one statistician, one counselor, two public health physicians and one family medicine specialist to produce the second consensus [24]. The expert panel suggested improvement in the items' content to ensure the instrument is not ambiguous and locally adapted [25].

2.6. Field Testing

The translated and content validated Malay version of ASSIST version 3.1 comprising 8 items. The translated ASSIST questionnaire was administered through interviewer guided by selected raters which took about 15 to 20 minutes. The se-

lected respondents in each clinic were interviewed four times. The research assistant distributed the questionnaires to each respondent. Difficulties during the testing regarding comprehensibility and any inconsistencies regarding were noted. The respondent testing was conducted with among 10 respondents and eleven officers from the Ministry of Health and National Anti-Drug Agency. Two separate interviews within less than 24 hours apart by two raters were conducted at initial visit. The respondents were requested to complete the second assessment of the ASSIST v3.1 within 7 - 10 days after their first assessment in order to determine the test-retest reliability. Lastly, experts were again invited to review the respondent testing and provide feedbacks on the final translated Malay version questionnaire.

2.7. Ethical Issues

Written informed consent was obtained prior to start of the study. Respondents' consent form as well as the information gathered from the questionnaire were kept in a private and confidential manner. All respondents' identification was de-identified prior to the analysis. This study was registered with National Medical Research Registry (NMRR) with the identification number NMRR 10-757-6837. Ethical approval was obtained from Medical Research and Ethics Committee, MOH. This study was supported by MOH research grant.

3. Statistical Analysis

Data analysis was performed using the SPSS 20.0 for Windows® (SPSS Inc., Chicago, IL, USA). Data exploration and cleaning for the missing values and outliers was done. For descriptive statistics, mean (SD) or median (IQR) for numerical variables was reported. Cronbach's α was used to assess the homogeneity of the questions for internal consistency within the test. A Cronbach α value ranging from 0.70 to 0.95 was considered to be adequate [26]. The total score for analysis was the grand total of specific substance score derived from the summation of Question 2 to 7. Assumption was made that there would be no significant change in the status of the patients within an interval of 7 - 10 days. The test-retest reliability was calculated by an intraclass correlation coefficient (ICC) using a two-way, mixed-model analysis under consistency. ICC two-way mixed absolute agreement and ICC two-way random absolute agreement were applied to assess inter-rater and interrater reliability respectively. The ICC values of 0.4 or greater were considered satisfactory ($r = 0.81 - 1.00$ excellent, $0.61 - 0.80$ very good, $0.41 - 0.60$ good, $0.21 - 0.40$ fair and $0.00 - 0.20$ poor) [27] [28].

4. Results

A total of 130 respondents were recruited, of which only 125 (96.2%) were included in the analysis. Sociodemographic characteristics of respondents by study locations are described in **Table 1**. Majority of the respondents were male, Malay and currently employed. Marital status and highest educational level varied by

Table 1. Sociodemographic characteristics.

Variable	HEALTH CLINIC AU2, Selangor	HEALTH CLINIC Tampin, N.Sembilan	HEALTH CLINIC Wakaf Bharu, Kelantan	HEALTH CLINIC Kota Sentosa, Sarawak	HEALTH CLINIC Kuala Perlis, Perlis	Total (N)
	(n = 26)	(n = 26)	(n = 25)	(n = 25)	(n = 23)	
Sex						
Male	25 (96.6)	26 (100.0)	25 (100.0)	24 (96.0)	23 (100.0)	123
Female	1 (3.4)	0 (0.0)	0 (0.0)	1 (4.0)	0 (0.0)	2
Total	26	26	25	25	23	125
Ethnicity						
Malay	23 (88.5)	24 (92.4)	24 (96.0)	13 (52.0)	23 (100.0)	107
Chinese	2 (7.7)	1 (3.8)	1 (4.0)	2 (8.0)	0 (0.0)	6
Indian	1 (3.8)	1 (3.8)	0 (0.0)	0 (0.0)	0 (0.0)	2
Other Bumiputra	0 (0.0)	0 (0.0)	0 (0.0)	10 (40.0)	0 (0.0)	10
Total	26	26	25	25	23	125
Marital Status						
Single	13 (50.0)	7 (26.9)	16 (64.0)	11 (44.0)	8 (34.8)	55
Married	13 (50.0)	15 (57.7)	6 (24.0)	14 (56.0)	15 (65.2)	63
Widow/widower	0 (0.0)	4 (15.4)	3 (12.0)	0 (0.0)	0 (0.0)	7
Total	26	26	25	25	23	125
Education level						
Primary	3 (11.5)	0 (0.0)	5 (20.0)	1 (4.0)	6 (21.7)	14
Secondary	22 (80.8)	25 (96.2)	20 (80.0)	17 (68.0)	17 (73.9)	100
Tertiary	1 (3.7)	1 (3.8)	0 (0.0)	7 (28.0)	1 (4.3)	10
Total	26	26	25	25	23	125
Current employment status						
Currently unemployed	3 (11.5)	4 (15.4)	9 (36.0)	9 (36.0)	3 (13.0)	28
Currently employed	23 (88.5)	22 (84.6)	16 (64.0)	16 (64.0)	20 (87.0)	97
Total	26	26	25	25	23	125

^amedian (Inter Quantile Range); ^bmean(Standard Deviation).

the locations.

Lifetime use of specific substances as covered in ASSIST questionnaire for the respondents are listed in **Table 2**. Notably for all of the locations, the common substances used were Tobacco and Alcohol. The use of illicit drugs, mainly Cannabis, ATS and Opioids was common among respondents at locations situated in Peninsular Malaysia.

The ICC results for inter-rater and interrater reliability are shown in **Table 3**. Tampin Health Clinic, Kota Sentosa Health Clinic and Kuala Perlis Health Clinic showed excellent intra- and interrater reliability involving various medical personnel.

Table 2. Lifetime use of addictive substance.

Substance	HEALTH CLINIC AU2, Selangor (n = 26)	HEALTH CLINIC Tampin, N.Sembilan (n = 26)	HEALTH CLINIC WakafBaru, Kelantan (n = 25)	HEALTH CLINIC Kota Sentosa, Sarawak (n = 25)	HEALTH CLINIC Kuala Perlis, Perlis (n = 23)	Total (n = 125)
a) Tobacco	26 (100.0)	26 (100.0)	25 (100.0)	25 (100.0)	23 (100.0)	125 (100.0)
b) Alcohol	26 (100.0)	21 (80.8)	24 (96.0)	14 (56.0)	18 (78.3)	103 (82.4)
c) Cannabis	25 (96.2)	15 (57.7)	25 (100.0)	5 (20.0)	17 (73.9)	87 (69.6)
d) Cocaine	4 (15.4)	4 (15.4)	1 (4.0)	1 (4.0)	7 (30.4)	17 (11.3)
e) ATS	22 (84.6)	16 (61.5)	24 (96.0)	3 (12.0)	17 (73.9)	82 (54.3)
f) Inhalants	5 (19.2)	6 (23.1)	16 (64.0)	2 (8.0)	5 (21.7)	34 (22.5)
g) Sedatives	11 (42.3)	5 (19.2)	16 (64.0)	3 (12.0)	11 (47.8)	46 (30.5)
h) Hallucinogens	9 (34.6)	11 (42.3)	24 (96.0)	0 (0.0)	10 (43.5)	54 (35.8)
i) Opioids	26 (100.0)	26 (100.0)	25 (100.0)	1 (4.0)	23 (100.0)	101 (66.9)
j) Other	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Table 3. Intra-rater and interrater reliability of translated Malay version ASSIST v3.1.

Site	Intra-rater reliability ^a		Interrater reliability ^b	
	Rater 1	Rater 2	Week 1	Week 2
AU2 HC, Kuala Lumpur (n = 26)	0.599 (0.290, 0.796) MO	0.621 (0.316, 0.810) CN	0.850 (0.695, 0.930)	0.999 (0.997, 0.999)
Tampin HC, N. Sembilan (k = 2, n = 26)	0.847 (0.691, 0.928) MA	0.965 (0.919, 0.984) SN	0.851 (0.695, 0.930)	0.990 (0.977, 0.995)
Wakaf Bharu HC, Kelantan (k = 2, n = 25)	0.517 (0.159, 0.755) MA	0.850 (0.688, 0.931) SN	0.643 (0.340, 0.825)	0.477 (0.100, 0.732)
Kota Sentosa HC, Sarawak (n = 25)	0.993 (0.985, 0.997) MA	0.964 (0.921, 0.984) SN	0.972 (0.939, 0.988)	0.972 (0.937, 0.987)
Kuala Perlis HC, Perlis (k = 2, n = 23)	0.984 (0.962, 0.993) MA	0.831 (0.647, 0.924) CN	0.899 (0.777, 0.956)	0.974 (0.941, 0.989)

^aICC 2-way mixed absolute agreement (repetition/time is considered as fixed at two visits). ^bICC 2-way random absolute agreement (raters are considered as random) based on grand total score of all substance. Abbreviations: HC, Health Clinic; MO, Medical Officer; CN, Community Nurse; MA, Medical Assistant; SN, Staff Nurse. Excellent reliabilities are noted in bold typeface.

5. Discussions

The Malay version of ASSIST questionnaire version 3.1 was developed to be used in primary care setting in Malaysia. The study was conducted at five representative zones chosen for their ability to provide culturally diverse samples with different dialects and a variety of substance use patterns in Malaysia. The present study indicates that the Malay version of ASSIST is a valid and reliable screening instrument for psychoactive substances in individuals attending primary health-care or specialized addiction treatment centres as supported by satisfactory content validity and inter/intra-rater reliabilities.

Content validation of the translated version was thoroughly performed fol-

lowing the guideline by WHO on translation of measurement tool [29]. The translation process was comprehensively conducted to achieve equivalence between the original ASSIST questionnaire versions with the translated version in detecting substance abuse disorder. Conceptual, item, semantic and operational equivalence were considered in the translation process [30] [31]. The experts carefully revised each version of consensus by considering the meaning discrepancies and local adaptation following the forward and backward translation procedures. The team of experts consist of psychiatrist, statistician, public health physicians, family medicine specialist, counselor and linguist.

The substance categories were translated into standard Malay language that resemble the original English words such as Kanabis for Cannabis, Kokain for Cocaine, Inhalan for Inhalant, Halusinogen for hallucinogen and Opioid for Opioids. However, a few street names were applied to represent specific substances under their categories such as *samsu* under the Alcohol category, *ATS*, *pilkuda* and *syabu* under Amphetamine-type stimulants category and *pil ubat batuk* under Hallucinogen. Common brand names were used instead of its pharmacological or generic names for instance Subutex/Suboxone for Buphenoprine and Valium for Midazolam. In addition, *ketum* or *kratum* which was not listed as in original ASSIST was being added. Ketum (*Mitragynaspeciosa*) is a naturally growing tropical tree in Southeast Asia particularly in Indochina and Malaysia. It is psychoactive and behaves as a μ -opioid receptor agonist like morphine, although its effects differ significantly from those of opiates.

Following the process of content validation, in fulfilling the need of face validation, the translated questionnaire was distributed to a sample of paramedics, staff nurses, medical officers and counsellors to assess the appropriateness, readability, organization and logical flow of the questionnaires [30] [32]. They were satisfied with the organization and presentation of the questionnaire. In general, all items were understood except Question7 “have you ever tried to cut down on using (first drug, second drug, etc) but failed?” which has been discussed at length. The “never fail” option was further described as “never fail or successful or never attempt” in order to enhance the interviewers’ and participants’ understanding of the term.

The ASSIST was translated and designed in standard Malay language. However, the interviewer-guided process is adaptable and adjustable to be applied in various Malaysian Malay related dialect since Malaysia has approximately 40 main Malay related dialects [33] [34]. Therefore, interrater-reliability and intra-rater-reliability was used to assess the degree to which different medical personnel in health care setting agree in their ratings towards usage of substance using the Malay version instrument.

In general, the raters showed a fair to excellent agreement. Good to excellent raters’ agreement was observed at Tampin, Kota Sentosa, AU2 Health Clinics and Kuala Perlis in which the respondents had a spectrum of addictions background, namely tobacco, alcohol, opioids, ATS and cannabis. These findings

were further supported by results from Kota Bharu Health Clinic, although it demonstrated a fair agreement. As for Kota Sentosa, most of the substances were adequately captured even though it is not a dedicated addiction health clinic.

Hence, considering the coverage of respondents' addiction characteristics, the Malay version of ASSIST is applicable to be used to screen varying degrees of substance use and substance-related problems in the Malaysian context.

In addition, comparable reliability coefficients values were observed among raters which consist of medical officer, medical assistant, staff nurse and community nurse. This is indicative that the translated questionnaire is suitable to be administered by trained personnel regardless of their categories.

Following the production of the validated Malay version of ASSIST questionnaire, it is the starting point towards the implementation of One Stop Centre for Addiction (OSCA) service in primary care setting, where ASSIST is going to be used as the tool to screen the clients and later on to be intervened accordingly [20]. In addition, the validated Malay version of ASSIST questionnaire can be also used by all general practitioners and at Cure & Care Clinics under National Anti-Drug Agency (NADA). Thus, coordination between the health clinics, general practitioners and Cure and Care Clinics can be further strengthened and will create uniformity in screening, treatment and rehabilitation process for the clients.

Following this study, it is also recommended to implement brief intervention for persons who are screened to be positive (moderate risk) for substance abuse as well as appropriate referral for those high risk and intravenous drug users. A reduction of substance use is expected if clients are given brief intervention and relevant treatment related to their ASSIST scores.

6. Limitations

Although majority of the centres demonstrated excellent reliability, there were two centres revealed fair performance probably due to Malay sub dialect variation and lack of familiarity with local street names of the substance. This limitation could be encountered in real application by proper training and exposure to the content and required responses to the questionnaire.

This study was able to capture almost the whole spectrum of specific substances that were listed in the questionnaire except for the category of "other substances". However, this finding was expected because the prevalence of other substances was low.

7. Conclusion

The Malay version of ASSIST v3.1 is a valid and reliable screening tool for substance abuse with values similar to those reported for the original and other translated versions. It is applicable to be administered by various categories of trained personnel in primary care setting in Malaysia. It is short and easy to administer and interpret with a minimal amount of time required for clinicians,

patients and researchers. Therefore, the Malay version of ASSIST v3 can be used as a screening tool for substance abuser in primary care setting in Malaysia.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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